

Amendment to the Specification

Please amend paragraphs [0016], [0020], [0021] and [0022] as shown.

[0016] A first light beam ~~50~~ 10, which may emerge from a first optical fiber, is amplified by amplifier 24 and reflected by mirror 40 to emanate from device 20 as an amplified first light beam 52, which may enter a second optical fiber. Similarly, a second light beam ~~54~~ 14, which may emerge from a third optical fiber, is amplified by amplifier 26 and reflected by mirror 42 to emanate from device 20 as an amplified second light beam 56, which may enter a fourth optical fiber. Likewise, a third light beam 58, which may emerge from a fifth optical fiber, is amplified by amplifier 28 and reflected by mirror 42 to emanate from device 20 as an amplified third light beam ~~60~~ 12, which may enter a sixth optical fiber. In this manner thousands of light beams may be simultaneously switched and amplified by device 20.

[0020] In the embodiment shown in FIG. 2, tilting mirror amplifiers 50 and 60 are part of a cross-connect amplifier 70. Amplifier 50 has a high gain material 51 including a stack of quantum wells and amplifier 60 has a gain material 61 including a stack of quantum wells. Optional Bragg mirrors 54 and 64 may be included in amplifiers 50 and 60, respectively. A conductive mirror layer 72 is common to amplifiers 50 and 60, the conductive layer also providing torsion bars 52 and 56 that also serve as leads 52 and 56 connecting amplifier 50 with support structure 80, and torsion bars 62 and 66 that also serve as leads 62 and 66 connecting amplifier 50 with support structure 80, as seen additionally in FIG. 3.

[0021] Conductive layer 72 is spaced apart from tilt electrodes 53, 55 and 57, which along with another tilt electrode, not shown, electrically control the angle of amplifier 50 relative to support 80. Conductive layer 72 is also spaced apart from tilt electrodes 63, 65 and 67, which along with another tilt electrode, not shown, electrically control the angle of amplifier 70 relative to support 80. A transparent electrode 59 is formed atop amplifier 50, and another transparent electrode 69 is formed atop amplifier 60. Electrode 59 has a thin central region and a thicker perimeter that is connected with torsion bar leads 84 and 85 that extend perpendicular to leads 52 and 56, as seen in FIG. 3. Similarly, electrode 69 has a thin central region and a thicker perimeter that is connected with torsion bar leads 86 and 87 that extend perpendicular to leads 62 and 66. An antireflective layer may be formed atop electrodes 59 and 69.

[0022] Conductors 59 and 69 bracket gain region 51, biasing the gain region to emit light that amplifies an incoming optical signal, both before and after reflection by mirrors 54. Similarly, conductors 69 and 72 bracket gain region 61, biasing the gain region to emit light that amplifies another incoming optical signal, both before and after reflection by mirrors 64. The stacks of multiple quantum wells 51 and 61 enhance this effect.